Project Plan – Ambient Student House

30.11.2021 – V1

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Signature of CEO:

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1. Introduction

This project plan describes all the work that must be done for the product, such as the systems we want to implement and the milestones we want to achieve, as well as describe how the tasks are handled. The project takes place in the period between the 29th of November and the 18th of January.

1. Project description

The sole reason of this project is to be the first on the market with a renewing smart student house, and because we are the first on the market the demand will be high. The reason for the automation is to enable the user to have more control over his house/apartment by using his student card. By adding useful automations and smart devices, the user won’t have to deal with turning on lights or flushing the toilet manually. For students this would be the ideal home since in most cases students are very lazy and leave their home in a mess. The goal of this project is to provide the user with a modern and easy to use home, even when they are not present (IoT).

1. Project Scope

To know what the boundaries of this project are, a scope is needed. With a clear scope you’ll know which goals and project deliverables will be worked towards. With this, hitting the goals is ensured and there won’t be any delay or overwork. Here below you can find the scope with the goals.

***Fire alert system***

In the event of a fire the fire alert system will be triggered. Our students will be alerted by a bright red blinking light as well as a buzzer alarm which are placed in every room and hallway.

***Smart lights***

The automatically dimmable lights will turn on as you enter the room. The default mode of the light system is 'ambient'. That means that the lights get brighter as the light sensor is exposed to less light and the lights get dimmer as the room gets more natural light.

The light system also has a second and third mode. The 2nd mode is 'party'. When in party mode the lights blink in intricate patterns.

The third mode is 'manual' and it's self-explanatory. The user will be able to manually dim or brighten the lights on demand.

***Microwave***

The user will be able to select time, power and then the countdown is going to start. Once the timer reaches 0, the red LED blinks 3 times.

***Toilet***

The toilet flushes automatically and automatically dispense hand sanitizer.

***Vending machine***

The user will first have to authorize themselves via the tag before they can select an item.

***Reception***

The student can register and check in with their student card. Their information will be stored in database. We also take note once they check out.

***Security system*** If a student fails to authorize 3 times in a row, the reception will come and take a look. In case the door is locked, but open - we notify the reception again. This is possible if either the chip is broken or the reader and in the worst case if someone is trying to break in.

1. Stakeholders

* Consumer - the consumer is going to enjoy all the implemented automatic features in the student house
* Product owner - our product owner is the CEO - Oswald Figaroa. He decides on the direction of the production.
* Police and fire department - they are going to react to emergencies
* Receptionist - an experienced receptionist will make sure our visitors are properly introduced to the environment
* Housekeeper - a necessity when looking to keep the student house as clean and tidy as possible

\**Sorted in descending order by priority*

The stakeholders are crucial for the project. For example, the consumer is the end-user of the system and the job of the team is to design the system for their needs. Also, the receptionist is important for the project because he gets the feedback from the customers/consumers. The product owner manages the direction of the project, so he is equally as important as the developers and the end-users. In general, the stakeholders are involved in the production, management and maintenance of the system.

1. Milestones

|  |  |  |  |
| --- | --- | --- | --- |
| Weeks | Description | Submission date | Presentation day |
| Week 15 | Sprint demo | 14.12.2021 | 14.12.2021 |
| Week 16 | Sprint demo | 20.12.2021 | 21.12.2021 |
| Week 17 | Sprint demo | 08.12.2021 | 09.12.2021 |
| 17. January | Showcase prototype | --------------- | --------------- |

1. Communication plan

* Various tools will be used to communicate and share information within the team. They are as follows:

|  |  |  |
| --- | --- | --- |
| Tool | Purpose | Frequency of usage |
| WhatsApp | Group chat and direct messaging | Daily |
| GitLab | Version control | Daily |
| Trello | Task management | Daily |
| Outlook | Scheduling appointments with important stakeholders | On business days |
| Fontys R10 building |

* We are going to meet on a weekly basis. Tutors and CEO are to be seen daily on business days.

1. Risk management

A project’s progress can be hindered for many reasons, of which the human factor is to be considered the most unpredictable. The table below reveals all the solutions to mitigate potential risks. Also, the risks evaluated by priority and impact:

|  |  |  |  |
| --- | --- | --- | --- |
| Risks | Solution | Priority | Impact |
| Employees burn out | Flexible working hours | High | High |
| Getting sick | Report sick leave and recovery to the company doctor or safety agency | Medium | High |
| Communication problems | Using Git and other applications to share work and discuss it with the partners. Also reply in time | High | High |
| Low activity | Set award for the best employee of the month | Low | Medium |

Dealing with issues on time in order to avoid dealing with bigger problems later.

1. Software configuration management

To prevent mishaps from occurring un our team we going to use the services of the reliable platform for sharing code – GitLab. To further ensure the safety of our code we will be saving a local copy of our work on personal devices, as well as storing the data in the cloud, using Google Drive. We are synchronizing our work with git and having an online backup. Each feature has its smaller tasks split between the developers for more productivity. Furthermore, the code is being monitored and checked regularly by the others.

1. User stories

***Fire alert system***

As a student I would like to feel safe in my house by having a fire alarm so that I can relax better.

Given a high level of particles in the air, the alarm goes off, alerting the student.

***Smart lights***

As a student I would like to be in a good mood to study or have fun with my friends by having smart and adjustable lights.

The student will be able to change between different light modes, choosing the appropriate one for the situation.

***Microwave***

As a student I would like to easily warm up simple meals without too much effort with the use of a microwave.

If the students are hungry and busy, they will be able to quickly heat up food.

As a CEO I would like only guests to be able to use the microwave with their student card.

If students want to make use of the microwave, they first must use their student card.

***Toilet***

As a housekeeper I would like to have more time to clean the rooms by the implementation of an automatic toilet.

Since the toilet flushes automatically, the housekeeper will be able to focus on other duties.

***Vending machine***

As a student I would like to have access to a quick snack if I am too lazy to use the microwave by making use of a vending machine.

When a student feels hungry, they can get access to the vending machine with their student card.

As a CEO I would like only guests to be able to use the vending machine with their student card.

If students want to make use of the vending machine, they first must use their student card and this way the CEO can easily keep track of which products are consumed most.

***Reception***

As a student I would like to spend less time during the accommodation process by using a tag scanner.

As a receptionist I would like to have a quicker procedure when welcoming guests to the student house

By using our smart reception, guests and reception staff will have an easier time during the accommodation process.